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EXAMINER

SAMS, MATTHEW C

ART UNIT	PAPER NUMBER
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2617

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10/05/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/810,998

Applicant(s)

SU ET AL.

Examiner

Matthew C. Sams

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-41 have been considered but are moot in view of the new ground(s) of rejection.

Information Disclosure Statement

2. The information disclosure statement filed on 2/28/2007 has been considered.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 3, 4, 6-8, 10-12, 15-17, 21-23, 25, 26, 28-30, 32-35, 39 & 40 are rejected under 35 U.S.C. 102(e) as being unpatentable by Liang et al. (US 2004/0029619 hereinafter, Liang).

Regarding claim 1, Liang teaches an integrated circuit wireless communication device having at least two wireless transceiver circuits (Fig. 1 [102] & Page 2 [0021]), a method for coordinating potentially conflicting wireless communications (Abstract), comprising:

assigning first and second priority indications to first (Fig. 1 [104]) and second (Fig. 1 [106]) wireless transceiver circuits, respectively, where each priority indication may be selected from a plurality of available priority indications; (Page 2 [0020] "Arbitration is provided on a packet-by-packet basis, according to a predetermined scheme of assumptions and priorities based on the end-use application" and Page 3 [0024] "all non-voice priority may be given to function 104 such that function 106 can only access antenna when function 104 is inactive")

receiving or transmitting data on the first wireless transceiver circuit in accordance with the relative priority of the first priority indication to the second priority indication; (Page 3 [0025])

detecting an application that is configured to receive or transmit data on the second wireless transceiver circuit; (Page 2 [0020] "Arbitration is provided on a packet-by-packet basis, according to a predetermined scheme of assumptions and priorities based on the end-use application" and Page 3 [0024] "in a number of embodiments, voice transmission and reception over Bluetooth is given priority over all other data traffic")

assigning a third priority indication to the second wireless transceiver circuit when the predetermined application is detected; (Page 3 [0024] "in a number of embodiments, voice transmission and reception over Bluetooth is given priority over all other data traffic") and

receiving or transmitting data on the second wireless transceiver circuit in accordance with a relative priority of the third priority indication to the first priority indication. (Page 3 [0024] "in a number of embodiments, voice transmission and

reception over Bluetooth is given priority over all other data traffic” and Page 4 [0030] “Bluetooth voice link takes precedence over other traffic types”)

Regarding claim 3, Liang teaches the third priority indication is a maximum priority indication that is available from the plurality of available priority indications. (Page 3 [0024] “in a number of embodiments, voice transmission and reception over Bluetooth is given priority over all other data traffic”)

Regarding claim 4, Liang teaches the third priority indication is greater than the second priority indication. (Page 3 [0024] “in a number of embodiments, voice transmission and reception over Bluetooth is given priority over all other data traffic” & “all non-voice priority may be given to function 104 such that function 106 can only access antenna when function 104 is inactive”)

Regarding claim 6, Liang teaches the receiving or transmitting data on the second wireless transceiver circuit in accordance with the relative priority of the third priority indication to the first priority indication comprises receiving or transmitting data on the second wireless transceiver circuit if the third priority indication comprises a higher priority than the first priority indication. (Page 3 [0024] “in a number of embodiments, voice transmission and reception over Bluetooth is given priority over all other data traffic”)

Regarding claim 7, Liang teaches the first priority indication comprises a user-specified priority indication for the first wireless transceiver circuit, such that the first wireless transceiver circuit is given priority in the reception or transmission of data relative to the second wireless transceiver circuit. (Page 1 [0006])

Regarding claim 8, Liang teaches the first wireless transceiver circuit comprises a WLAN wireless interface device (Fig. 1 [104]), and wherein the second wireless transceiver circuit comprises a Bluetooth wireless interface device. (Fig. 1 [106])

Regarding claim 10, Liang teaches the first wireless transceiver circuit is compliant with Bluetooth and the second wireless transceiver circuit is compliant with IEEE 802.11(b) or IEEE 802.11(g). (Page 2 [0017-0018]) It is well within the scope for one of ordinary skill to realize that if the highest priority information is being transmitted by the WLAN circuit (opposite of what is found in Liang) and not the Bluetooth circuit (as found in Liang), to make the WLAN circuit have the highest priority.

Regarding claim 11, Liang teaches an apparatus for coordinating wireless communications, comprising:

- a first wireless interface circuit (Fig. 1 [104]) for performing receiving or transmitting operations of a first type of wireless communication having a first priority level selected from a first plurality of priority levels; (Page 2 [0020-0021] and Figs. 1 & 2)

- a second wireless interface circuit (Fig. 1 [106]) for performing receiving or transmitting operations of a second type of wireless communication having a second priority level selected from a second plurality of priority levels; (Figs. 1 & 2 and Page 2 [0020-0021] and Page 3 [0024])

- an interface (Fig. 1 [120, 122, 124, 126 & 128]) coupling the first and second wireless interface circuits for transmitting priority levels between the first and second wireless interface circuits; (Fig. 1 [104 & 106] and Page 3 [0024-0025]) and

a controller (Fig. 1 [118]) for coordinating the operations of the first or second wireless interface circuits in relation to a relative priority of the first and second priority levels, said controller comprising priority level adjustment logic for adjusting a priority level in response to detecting a predetermined condition. (Page 2 [0020] and Page 3 [0024-0027])

Regarding claim 12, the limitations of claim 12 are rejected as being the same reason set forth above in claim 10.

Regarding claim 15, Liang teaches the predetermined condition comprises a request to receive or transmit real time data over the second wireless interface circuit. (Page 3 [0024] "in a number of embodiments, voice transmission and reception over Bluetooth is given priority over all other data traffic")

Regarding claim 16, Liang teaches the predetermined condition comprises real-time human interface device (HID) traffic being transmitted or received on the second wireless interface circuit, and wherein the priority level adjustment logic increments the second priority level. (Page 1 [0004] "user interface functions")

Regarding claim 17, Liang teaches the predetermined condition comprises a user-specified priority level being entered for the second wireless interface circuit, and wherein the priority level adjustment logic increments the second priority level above the first priority level in response to detecting the user-specified priority level. (Page 1 [0006])

Regarding claim 21, the limitations of claim 21 are rejected as being the same reasons set forth above in claim 1.

Regarding claim 22, Liang teaches the first priority indication and said second priority indication are selected from a plurality of available priority indications. (Page 3 [0024])

Regarding claim 23, the limitations of claim 23 are rejected as being the same reasons set forth above in claim 1.

Regarding claim 25, the limitations of claim 25 are rejected as being the same reasons set forth above in claim 3.

Regarding claim 26, the limitations of claim 26 are rejected as being the same reasons set forth above in claim 4.

Regarding claim 28, the limitations of claim 28 are rejected as being the same reasons set forth above in claim 6.

Regarding claim 29, the limitations of claim 28 are rejected as being the same reasons set forth above in claim 17.

Regarding claim 30, the limitations of claim 30 are rejected as being the same reasons set forth above in claim 8.

Regarding claim 32, the limitations of claim 32 are rejected as being the same reasons set forth above in claim 10. It is well within the scope for one of ordinary skill to realize that if the highest priority information is being transmitted by the WLAN circuit (opposite of what is found in Liang) and not the Bluetooth circuit (as found in Liang), to make the WLAN circuit have the highest priority.

Regarding claim 33, the limitations of claim 33 are rejected as being the same reasons set forth above in claim 11.

Regarding claim 34, the limitations of claim 34 are rejected as being the same reasons set forth above in claim 11.

Regarding claim 35, the limitations of claim 35 are rejected as being the same reasons set forth above in claim 10.

Regarding claim 38, the limitations of claim 38 are rejected as being the same reasons set forth above in claim 15.

Regarding claim 39, the limitations of claim 39 are rejected as being the same reasons set forth above in claim 16.

Regarding claim 40, the limitations of claim 40 are rejected as being the same reasons set forth above in claim 17.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2, 13, 14, 19, 20, 24, 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liang in view of Lane et al. (US-6,978,121 hereinafter, Lane).

Regarding claim 2, Liang teaches the first wireless transceiver circuit coupled to the second wireless transceiver circuit such that a priority indication may be transferred between them. (Fig. 1 [[104, 120, 118, 122 & 106]]) Liang differs from the claimed invention by not explicitly reciting the first wireless transceiver circuit comprises a MAC

layer module that is directly coupled to a MAC layer module of the second wireless transceiver circuit such that a priority indication may be transferred between the MAC layer modules.

In an analogous art, Lane teaches a dual-mode radio transceiver (Fig. 2 [210 & 250]) that includes a first wireless transceiver circuit comprises a MAC layer module that is directly coupled to a MAC layer module of the second wireless transceiver circuit such that a priority indication may be transferred between the MAC layer modules. (Fig. 2 [230 & 270] and Col. 5 lines 35-51) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the dual-mode transceiver of Liang after modifying it to incorporate the communication between MAC layer modules of Lane. One of ordinary skill in the art would have been motivated to do this since it enables the priorities of transmitting events to be communicated between the MAC modules. (Col. 5 lines 35-51)

Regarding claim 13, Liang teaches the limitations of claim 11 above, but differs from the claimed invention by not explicitly reciting the controller comprises a MAC layer module.

In an analogous art, Lane teaches a controller comprises a MAC layer module. (Fig. 2 [230 & 270] and Col. 5 lines 35-51) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the dual-mode transceiver of Liang after modifying it to incorporate the communication between MAC layer modules of Lane. One of ordinary skill in the art would have been motivated to do this since it enables the priorities of transmitting events to be communicated between the MAC modules. (Col. 5 lines 35-51)

Regarding claim 14, Liang in view of Lane teaches the controller comprises a first MAC layer module in the first wireless interface circuit and a second MAC layer module in the second wireless interface circuit. (Lane Fig. 2 [230 & 270] and Col. 5 lines 35-51)

Regarding claim 19, Liang teaches an apparatus for implement a dynamic collaboration protocol, comprising:

first means for sending or receiving a first wireless signal having a first allocated priority; (Page 3 [0024] and Fig. 1 [104])

second means for sending or receiving a second wireless signal having a second allocated priority; (Page 3 [0024] and Fig. 1 [106])

means for adjusting the second allocated priority to be higher than the first allocated priority if real-time human interface device (HID) traffic is detected on the second means; (Page 1 [0004] and Page 3 [0024] "voice transmission and reception over Bluetooth is given priority over all other data traffic") and

means for interfacing and coordinating throughput performance of the first and second means such that whichever of the first or second means has a higher allocated priority is given higher throughput performance. (Page 3 [0024-0027])

Liang differs from the claimed invention by not explicitly reciting a first MAC layer module, a second MAC layer module and a means for interfacing the first and second MAC layer modules to coordinate throughput performance.

In an analogous art, Lane teaches a dual-mode radio transceiver (Fig. 2 [210 & 250]) that includes a first wireless transceiver circuit comprises a MAC layer module that is directly coupled to a MAC layer module of the second wireless transceiver circuit such that a priority indication may be transferred between the MAC layer modules. (Fig.

2 [230 & 270] and Col. 5 lines 35-51) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the dual-mode transceiver of Liang after modifying it to incorporate the communication between MAC layer modules of Lane. One of ordinary skill in the art would have been motivated to do this since it enables the priorities of transmitting events to be communicated between the MAC modules. (Col. 5 lines 35-51)

Regarding claim 20, Liang in view of Lane teaches the second wireless signal comprises a packet signal, and wherein the means for adjusting the second allocated priority evaluates each packet of the packet signal to detect if real-time human interface device (HID) traffic is present on the second means. (Liang Page 1 [0004] and Page 3 [0024])

Regarding claim 24, the limitations of claim 24 are rejected as being the same reasons set forth above in claim 2.

Regarding claim 36, the limitations of claim 36 are rejected as being the same reasons set forth above in claim 13.

Regarding claim 37, the limitations of claim 37 are rejected as being the same reasons set forth above in claim 14.

7. Claims 5 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liang.

Regarding claim 5, Liang teaches a second wireless transceiver circuit comprises a Bluetooth application (Page 2 [0021]), but differs from the claimed invention by not explicitly reciting the predetermined application comprises a Human interface device driver. However, Liang teaches one of the predetermined applications comprises a user

interface function (Page 1 [0004]) is deemed to be the highest priority (Page 3 [0024] "in a number of embodiments, voice transmission and reception over Bluetooth is given priority over all other data traffic") and which one of ordinary skill in the art would recognize as being an equivalent term. Further proof can be seen in the previously cited reference to Kardach (US 2004/0204031) Page 5 [0031] as the HID profile being "high priority".

Regarding claim 27, the limitations of claim 27 are rejected as being the same reasons set forth above in claim 5.

8. Claims 9 & 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liang in view of Michaelis et al. (US 2004/0009751 hereinafter, Michaelis).

Liang teaches one wireless transceiver circuit comprises a Bluetooth wireless interface device, but differs from the claimed invention by not explicitly reciting the second wireless transceiver circuit comprises a second Bluetooth wireless interface device.

In an analogous art, Michaelis teaches a dual-mode wireless device (Fig. 2) that includes two Bluetooth personal area network interfaces. (Page 2 [0018-0020]) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the invention of Liang after modifying it to incorporate two Bluetooth wireless interface devices of Michaelis. One of ordinary skill in the art would have been motivated to do this since Bluetooth has a limitation upon the number of concurrent communications that can occur and having two interfaces doubles the possible number of connections.

Regarding claim 31, the limitations of claim 31 are rejected as being the same reasons set forth above in claim 9.

9. Claims 18 & 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liang in view of Carter (US-7,003,285).

Regarding claim 18, Liang teaches the limitations of claim 11 above, but differs from the claimed invention by not explicitly reciting the transmission of audio-video traffic and securing the highest priority level available for the transmission of audio-video data.

In an analogous art, Carter teaches a multi-sensory device (Fig. 1 [102]) that can receive audio, video or audio-video traffic and secures the highest priority level available for audio-video data. (Col. 3 lines 26-29, Col. 4 lines 38-42 and Col. 6 line 64 through Col. 7 line 28) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the dual-mode device of Liang after modifying it to incorporate the audio-video priority levels of Carter. One of ordinary skill in the art would have been motivated to do this since the quality of audio-video signal broadcasts can diminish greatly with increased latency.

Regarding claim 41, the limitations of claim 41 are rejected as being the same reasons set forth above in claim 18.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew C. Sams whose telephone number is (571)272-8099. The examiner can normally be reached on M-F 7:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid can be reached on (571)272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MCS
9/28/2007


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